

IN THE CLAIMS:

Please amend the claims, as follows:

Claims 1 - 2 cancelled.

Claim 3 (new): A recoil mechanism for a gun having a frame with a barrel and a slide that is movable rearwardly of the frame and barrel, when the gun is fired, the mechanism comprising:

 a cylinder having a rear end with an external flange and an internal diaphragm spaced forwardly of the flange and disposed between a rear chamber and a front chamber both defined in the cylinder;

 a round nut fixed to the frame;

 an axle extending in the cylinder, the axle having a rear end threaded to the round nut and a collar space forwardly of the rear end and being forward of the diaphragm and trapped in the front chamber by the diaphragm;

 the first spring around the cylinder, the first spring having a front end abutting the slide and a rear end abutting the flange;

 a second spring extending at least partly in the rear chamber and having a rear end abutting the round nut and a front end abutting the diaphragm;

 a third spring in the front chamber, the third spring being shorter in length than the front chamber;

 the front chamber having a front entry end and a set screw closing the front entry end of the front chamber;

 a magnet magnetically attractively engaged to a front end of the slide and to a front end of the cylinder before the gun is fired; and

a support for holding the magnet to the frame comprising one of: an extension of the axle in the front chamber, extending through the set screw and the magnet, and a locking nut threaded to a front end of the extension for fixing the magnet to the axle and frame; and a base fixed to the frame and to the magnet for fixed the magnet to the frame;

the magnet attracting the slide and the cylinder in a forward direction that is opposite to a rearward recoil direction of motion of the slide when the gun is fired; and

upon firing of the gun, a force of gases in the barrel acting on the slide to move the slide in the rearward recoil direction, rises to a point which overcomes an attractive force between the magnet and the slide so that the slide starts to move in the rearward recoil direction, and, after a time lag, the slide engages the cylinder causing the cylinder to also move in the rearward recoil direction;

the time lag being selected to allow a maximum expansion of gases from the barrel for propelling a bullet from the barrel while the slide recoils, so that the bullet has improved range;

the third spring functioning in the front chamber to become compressed later during the recoil of the slide to absorb a remainder of recoil energy of the slide, for decelerating any further recoil of the slide, with most recoil energy of the slide being absorbed by a progressive compression of the first spring and the second spring.

Claim 4 (new): The recoil mechanism of claim 3, wherein the magnet support comprises the extension of the axle in the front chamber, extending through the set screw and the magnet, and the locking nut threaded to the front end of the extension for fixing the magnet to the axle and frame.

Claim 5 (new): The recoil mechanism of claim 3, wherein the magnet support comprises the base fixed to the frame and to the magnet for fixed the magnet to the frame.